



## **ROLES OF THE SOCIOLOGIST IN THE INTERPRETION OF DISEASE OCCURRENCE IN SOCIETY**

**OGBU, Emmanuel**

Department of Sociology,  
Faculty of Social Sciences,  
University of Ibadan, Nigeria

[emmogbu@gmail.com](mailto:emmogbu@gmail.com) or [mcjemmanuelogbu@gmail.com](mailto:mcjemmanuelogbu@gmail.com)

### ***Abstract***

*Decades ago, Sociology of disease was something of a misnomer. The time has come to embrace the sociological discourse on diseases as focus of medical care. This is because non-involvement of sociologists in interpreting diseases may often lead to undertreatment, overtreatment or mistreatment of diseases which will be harmful to individuals in society. This paper contains an extensive introduction of the nature of disease emergence from social background/causation. Many studies on disease occurrence are derived from pathological, etiological, applied clinical, epidemiological, neurological, and other congenial fields, yet dearth of information exist on the social interpretation of disease, even within stream of sociology of health and illness. This paper is thus an advocacy for sociological interpretation of disease situations in society which is critical for fuller understanding of the nature of diseases in this contemporary society. The paper has provided some useful information on how social relations indeed influence the occurrence and the distribution of diseases. It strongly stressed that disease causation is not limited to biological factors which has some limitations. Two main sociological perspectives were employed to further explain the arguments on etiology of disease. Finally, the key roles of the sociologist in disease interpretation in society were outlined.*

**Key words:** Disease, Epidemiological triad, Medical sociology, Sociology in epidemiology, Sociology of disease.

### **Introduction**

Health is a state of complete physical, social and mental well-being and not mere absence of diseases and infirmity. On its part, disease is an inevitable part of life, and coping with disease is a universal aspect of the human experience. According to Robert & Manchester (2005), the experience of disease is as inescapable as death itself. Diseases are not natural calamities, but are injuries inflicted on people by the nature of their daily activities and their customary mode of lives; and easily exposed to diseases are those people who work outdoors and are the most likely of all to suffer health damage from exposure to ultraviolet (UV) radiation, or non-solar sources such as arc welding, the curing of paints, inks, disinfection of equipment in hospitals and laboratories, pollutions and so on (WHO, 2003)



According to the protocol of the Occupational Safety and Health Convention, Np 155, (1981) the term “occupational diseases” covers any disease contracted as a result of an exposure to risk factors arising from work activity (International Labor Organization, 2010)

Diseases is not only a bio-physiological phenomenon that trigger changes in and causes a malfunction in the human body, but also a socio-cultural phenomenon that influence the changes in the human body by the perception, meaning, and understanding attached to the presence of the diseases itself. Unfortunately, artists and authors in the past have tended to illustrate and describe the more visual and dramatic diseases and ignored those which may have been more commonplace (Roberts & Manchester, 2005).

Due to the relative nature of diseases and human-group dynamics, Sociologists do not generally believe in a one-dimensional interpretation of the occurrence of diseases in society. Truly, sociologists allow for empiricism in discussion of diseases, in terms of its causal relationship on the basis of clinical, pathological, epidemiological, psychological, sociological, anthropological, toxicological, and the etiological backgrounds in identifying and evaluating the meaning, causation and consequences of diseases in human environment.

The greater the number and variety of perspectives on the pathological past with which we engage in, the greater the chance that our analysis will not be completely disabled by problems of retrospective diagnosis (Hordon, 2000: 208: In, Roberts & Manchester, 2005) For the purpose of a general rule, all the above fields and more are useful for determining the causal relationship between a specific disease and the corresponding eclectic interpretations of the cause and the effect of that disease in society.

For instance, explaining further on general rule, in terms of occupational diseases, the symptoms are not sufficiently characteristic to enable an occupational disease to be diagnosed without the knowledge of the pathological changes engendered by the physical, chemical, biological or other factors encountered in the exercise of an occupation (ILO, 2010).

Sociological stance strongly uphold the interdisciplinary approach in explaining diseases; as a result of improvements in knowledge regarding the mechanism of action of disease factors, the steady increase in the number of substances employed, the quality and variety of suspected agents. It becomes more and more feasible to make an accurate diagnosis, while the range of diseases (recognized as occupational, genetic, environmental, etc.,) in origin is broadening (ILO, 2010).

Sociologists recognizes the clinical decision-making or applied clinical epidemiological constructs in interpreting diseases, notwithstanding deciding on the nature of diseases is



not an “exact science” but rather a question of judgments based on the critical review of all available evidence, ranging from cultural beliefs, social dimensions, relative customary mode of living of the people, related ethos and other prevalent circumstances.

The social production of health and illness or diseases, poor housing, social class disparity, racial factor, low income, poor education, poor nutrition, unemployment, crowding, poor medical care services, strenuous conditions of employment in non-hygienic settings, increased exposure to noxious agents; poor social network, environmental exploration, and psycho-social stress have been found to be associated with the development of diseases leading to dysfunction in the human body (e.g., coronary heart disease, hypertension) (Berkman & Syme, 1979). Infections and abnormal behaviors in social relations of man, animals and the environment can develop the occurrence of diseases in society.

In addition, Sociologists, in terms of the occupational causation of diseases agree with the office of International Labor Organization (2010), in identifying eight factors to consider in determining diseases, which include the following:

- Strength of association: the greater the impact of an exposure on the occurrence or development of a disease, the stronger the likelihood of a causal relationship.
- Consistency: different research reports have similar results and conclusions.
- Specificity: exposure to a specific risk factor’s results in a clearly defined pattern of disease’s.
- Temporality or time sequence: the exposure of interest preceded the diseases by a period of time consistent with any proposed biological mechanism.
- Biological gradient: the greater the level and duration of exposure the greater the severity of diseases or their incidence.
- Biological plausibility: from what is known of toxicology, chemistry, physical properties or other attributes of the studied risk or hazard, it makes biological sense to suggest that exposure leads to the disease’s.
- Coherence: a general synthesis of all evidence (e.g. human epidemiology and animal studies) leads to the conclusion that there is cause-effect relationship in a broad sense and in terms of a general common sense.
- Interventional studies: sometimes, a primary preventive trial may verify whether removing a specific hazard or reducing a specific risk from the working environment eliminates or reduces the development of a specific disease or its incidence.

In recent times, researches and epidemiological studies have greatly contributed in this aspect and better knowledge of diseases has allowed us to achieve a better medical definition (ILO, 2010).

### **Disease constructs and pattern of threats**

Medical sociology has been linked to etiology of disease, as it considers diseases within the population’s context of living environment, diet habits, physiological, economy,



political, and other characterized influences in society that can generate explanation for the cause and effect of diseases.

Although, different diseases may produce similar sign and symptoms, in the past, attitude towards illness (or diseases) have often been due to the failure in understanding the nature of the diseases itself: and there are circumstances where a disease description does not correspond with any known disease in the modern world...because of the inaccuracy of its representation (Roberts & Manchester, 2005).

Aside the biochemical threatening nature of some diseases, the social construct of disease, in terms of its meaning, causes and effect can influence human reaction, action and or inaction towards that disease in question.

For instance, the clinical picture associated with respiratory diseases: cancer of the lungs, chronic bronchitis and tuberculosis can all result in coughing up blood (haemoptysis) and shortness of breath (dyspnoea); And the cultural context...aids enormously in the interpretation of the history of this disease (Roberts & Manchester, 2005).

#### **Anthropogenic and zoonotic threats in society**

The social production of disease is directly or indirectly anthropogenic and zoonotic. The Tuskegee syphilis experiment (Alabama), out of the 600, 399 African-American men suffering from syphilis without their informed consent were left untreated for forty years, instead of six agreed months so that the public health service could observe what happened. In cases as this, it is the poor and powerless that is exploited by being used as subject for experiments (Young, 2001: Centers for disease control and prevention, 2015).

The recent emergence of disease situation has affected human relationship, longevity, migration, employment, among other factors in a number of ways that has become a concern for sociologists. Therefore, collaboration on surveillance and information sharing between human health, agriculture, and environment sectors helps promote a “one health” approach that better understands diseases transmission dynamics and intervention to maximize co-benefits at the nexus between health and biodiversity holistically (Machalaba, Daszak, Karesh, & Romanelli, 2015: Romanelli, Cooper& Dias, 2014)

The SARS, H7N9, Marburg virus, and Ebola crisis in particular had caused over 21, 000 reported cases as of mid January in West Africa and some other part of the world, as it shows that human practices (anthropogenic) have contributed to the highlighted critical deficiencies in global health infrastructure, as well as the impact of diseases outbreaks to developing economies: yet majority of human pathogens have originated from animal (zoonotic) interaction with human and their environment (Who, 2015: Machalaba, Daszak, Karesh, & Romanelli, 2015: Taylor, Latham & Woodhouse, 2001)



Sociologists question the food production (e.g. consumption habits), land use (e.g. deforestation, mining, oil extraction), global trade, migration, and health policies that has greatly influenced human group dynamics and survival: with 70% of emerging infectious diseases coming from wildlife: are responsible for a billion cases and millions of human death annually (Jones, Patel, Levy, Storeygard, Balk, Gittleman & Daszak, 2008: Karesh, Dobson, Lloyd-Smith, Lubroth, Dixon, Benneth, et al. 2012).

Therefore, the emergence and reemergence of diseases in society are most influenced by human activities in varieties of ways and its consequences abounds.

### **Diseases occurrence in the early society**

According to Roberts and Manchester (2005) Interpreting disease in terms of archaeological findings reveals that no single evidence from skeletal remains can account for all disease occurrences, as it can only reveal a small percentage of the disease load in a population.

Gillman (2006) posit that the first generation of epidemiological studies found out that there is an association between birth weight and disease outcome decades later (Barker, 1998).

The society's where these diseases occur has always been the field-laboratory for sociologists in understanding the etiology of diseases. Therefore the human groups that survived the acute phase of certain diseases prevalent in the early society have today experienced the chronic stage of disease reemergence as it flows through the individual's susceptibility.

There is certainly an assumption (not necessarily correct) that there is little or no place for social scientists (sociologists, anthropologists etc.) in the interpretation of diseases in society. But yet, when interpreting diseases in the past care must be taken (Roberts & Manchester, 2005)

Useful descriptions of the diseases causation, treatment and healing process in early society have traces from practice in cannibalism, demonism, micro organisms, some others appears benign, but are malignant in their actual nature. Early society showed how social pattern of living influenced common occurrence of diseases from which human suffered in antiquity.

Palaeopathology would seem to provide our...hardest evidence for past afflictions; In antiquity, those diseases with the greatest impact in terms of morality, personal disfigurement or social and economic disruption probably evoked the greatest response from society (Horden, 2000:208: In Roberts & Manchester, 2005).



With an extension into sociology of disease, medical sociologists can engage into a proper investigation of disease causations.

Through its methods and approaches, the sociology of health and illness provides a tool for investigating how people interact with and adapt to their environment. However, the degree of frailty in a population is not known for the past, nor its association with the development of abnormal lesions, and knowledge of the number and length of exposure a person's had to a disease-causing organism is also limited (Roberts & Manchester, 2005).

### **The Sociology of Epidemiological triad**

Epidemiology is a discipline that has evolved with the recent changes taking place as it relates to the emergence of new diseases in society. This evolution has allowed epidemiology to remain a useful and relevant tool in bringing to light the understanding of diseases and health events in society (Fre' rot, Lefebvre, Aho, Callier, Astruc, & Aho Gle'le', 2018).

Medical sociologists are concerned with explaining the pattern of diseases occurrence, social factors that influence and account for the pattern of disease occurrence, and their pattern of prevention in human group or population. They gather information, interpret, and use the information to promote health and reduce disease occurrence in society.

For instance, recent studies on environmental risk from pollution causing diseases, found out that those primary pupils who are exposed to car fumes on daily basis developed less quickly than children whose schools enjoy cleaner air in the environment: and those people in areas of poorer air quality encountered more health problems, such as chest pain, dry throat, nausea, emphysema, bronchitis, lung damage, eye irritations, asthma among others (Nwaegbulam, Alao & Muanya 2015: Ogundipe, 2018).

Various methods can be used to carry out epidemiological investigations: surveillance and descriptive studies can be used to study distribution; analytical studies can be used to study determinants of diseases in society (Fre' rot, Lefebvre, Aho, Callier, Astruc, & Aho Gle'le', 2018) The Sociology in Epidemiology describes the prevalence, dynamics, distribution, determinants of diseases in human population. It is the quantitative and qualitative analysis of the circumstance under which diseases process occurs, the factors affecting their incidence, emergence and distribution, the host responds, especially the use of health knowledge (from traditional health belief models) relative in society.

It is not the place for sociologists to explain the genetic causation but socio-cultural causation influencing the emergence of disease in society. The individuals diagnosed with diseases are living in society and have family members too even after they have been diagnosed and treated they will return back to the society. Therefore, it is the interest of



sociologists to understand, explain and predict the reactions, and actions of both the society and the persons living with diseases.

An affected individual with physical signs and symptoms may be clinical features (e.g. the swelling and pain of joint diseases respectively), but the individual relationships that affect the everyday living before and after the exposure to the disease agents are sociological. For instance, in Nigeria it is a known fact that there is high level of photochemical smog (deadly air pollution with a mix of particulate matter (PM), asbestos, sulfur dioxide (SO<sub>2</sub>), nitrogen oxide (NO), carbon monoxide (CO), and partially unburnt hydrocarbons) both in the rural and urban areas of cities in Nigeria, affecting more than 18 million residents daily.

These substances contribute to the death of 7 million people (with 150 deaths per 100,000 Nigerian), 1 in 8 of the total global deaths. With a very high risk disease causing agents, air pollution is now the world's largest single environmental health risk and Nigeria is ranked 4<sup>th</sup> deadliest globally (Nwaegbulam, Alao & Muanya, 2015; Ogundipe, 2018).

Medical sociologists help make possible the investigation of disease occurrence by identifying the cause of that diseases and make known possible preventing variables to control the distribution and determinant of disease distribution in society.

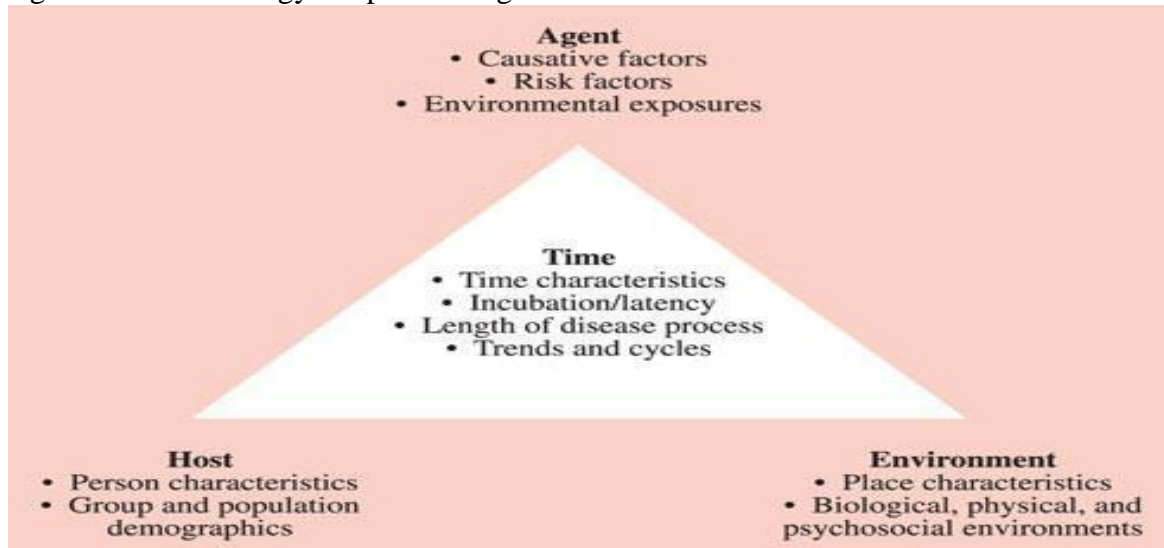
Nwaegbulam, Alao & Muanya (2015) maintained that, findings from Lagos Metropolitan Area Transport Authority through its Lagos Air (vehicular emission) Quality Monitoring Study (LAQMS) between 2007-2008 data, reveal that there is a strong link between both indoor and outdoor air pollution exposure and cardiovascular diseases, such as strokes and ischemic heart disease, as well as between air pollution and cancer, respiratory diseases including acute respiratory infections and the chronic obstructive respiratory diseases: and industries, dumpsites, open incinerators, power generators, and transport is a major source of air pollution in cities (e.g. Oshodi, Imota, Ikeja, Ikotun, Agbara, Mazamaza) within southwestern Nigeria. In addition, Onitsha, Kaduna, Aba, and Umuahia are the four out of the 20 African cities with the worst air quality in the world (Ogundipe, 2018).

The sociology of epidemiological triad describes the three main factors always present before and after disease occurrence patterns a frequency and distribution. With the use sociological methods to plan, evaluate strategies, and provide intervening measures to prevent or reduce the effects of disease occurrence in society, sociologists explains how, where, who and when people get exposed to disease, and how to avoid disease occurrence in society.





Figure 1: The sociology of epidemiological triad



The epidemiological triad (Miller, 2001: 63)

### **Theoretical perspectives**

According to Parsons, dysfunctions in the human body as a result of disease causing agents, gives the individual the opportunity to assume a sick role which entertains increased family network or solidarity, increased functional, adaptive and resistant power against the disease.

These dysfunctions can be manifest (intended) or latent (unintended) and have negative effects on the individual and their environment (Parsons 1967: Merton, 1968). Merton gives us the example of the ‘‘Hopi Indians who, in times of drought; gather to perform a ritual dance with the professed intention of magically causing rain, which in that time promote feeling of solidarity, and relieve tension (Wahlang, 2018).

The construct of the symbolic interactionist stressed that diseases are communicable. This Middle range theory bring our focus down to a manageable level and it allows us to make more educated conclusion; just as one speak of a theory of prices, or a germ theory of diseases, or kinetic theory of gases (Turner, 2001: 88: Merton, 1949: 39). Symbolic interactionist deepen into detailed knowledge gained from the patient’s (victim’s) experiences of a disease’s and the underlying reason for the appearance which could have been influenced by economic, cultural, biological, climate or environmental changes.

Nevertheless, the theoretical interpretations from the Symbolic interactionist and structural functionalist point of view provides different, but interrelated concepts, constructs,





definition and propositions that explains diseases occurrence by specifying certain variables that contributes to disease occurrence in society.

### **Role of Sociologists in the interpretation of disease occurrence in Society**

Medical sociological interests tend to follow two streams: Sociology in medicine and Sociology of medicine. Sociologists allows for empiricism and subjectivism in discussion of diseases, in terms of its causal relationship on the basis of clinical, pathological, epidemiological, psychological, sociological, anthropological, toxicological, and the etiological backgrounds in identifying and evaluating the meaning, causation and consequences of diseases in human environment. The following have been identified as the key roles of sociologists in the interpretation of disease occurrence in society.

#### **Field observers**

The threatening nature of recent disease occurrence in the world has paved ways for various health related observers to explain better the health outcomes in societies. Sociological stance strongly upholds the interdisciplinary approach in explaining diseases as a result of improvements in knowledge regarding the mechanism of action of disease factors. This steady increase in knowledge on disease occurrence, the quality and variety of suspected diseases agents are generally revealed by sociologists as (participant or non participant) field observers who documents information primarily on disease occurrence based on the question of judgment from all available evidence, ranging from socio-cultural belief, customary mode of living, and other prevalent circumstances surrounding the disease occurrence as observed from the field surveys.

#### **Social researchers**

Social researchers do not generally believe in a one-dimensional interpretation of the disease occurrence in society. Many disease outcomes are not natural calamities, but emerge as a result of people customary mode of living and other social factors. Due to the relative nature of diseases and human-group dynamics, medical sociologists therefore carry out researches using primary and secondary sources to explain and predict patterns of disease occurrence, health outcomes, social factors that accounts for the disease occurrence, and their pattern of prevention in human groups. They gather information, interpret, and use the information to promote health and reduce disease occurrence in society.

#### **Social educators**

Sociologists create educational platforms where social awareness on how to access health care services are circulated. They also expose the risk factors of diseases, train and impact skills on how to carry out health surveys and seek to answer several questions of diverse social interests.



### **Social ancillaries**

Medical sociologists outside the clinical diagnosis of physicians but within healthcare industry construct trends of socio-cultural findings that reveal both patients' treatments and or factors that promote health seeking behaviors. By so doing, they bring to the awareness of health workers (within or outside the hospital), these possibilities by providing supporting monitoring team on both in and out patients' treatment modalities.

### **Administrative investigators**

Medical sociologists perform administrative duties for public or private health organizations or agencies. Part of their responsibility is to monitor the progress of any health program, evaluate and predict its outcome in society. They provide investigative contributions that employ methodological strategies of sociology to measure for a given phenomenon of interest.

### **Conclusion**

Disease occurrence, until recently has been majorly an issue of clinical concern. However, most new diseases that have caused millions of deaths in the recent times are not caused by micro-organisms alone, but by human-group behavior, cultural practices, political failures and so on. All of these demand sociological interpretations for a better explanations and predictions as it relates to the disease occurrence in society. Without involving sociologists as part of the focus to consider in interpreting diseases the treatment of individuals may lead undertreatment, overtreatment or mistreatment of diseases which will at best be harmful to individuals in society.

This study therefore concludes that human exposure to disease causing micro-organisms, infections and as well as abnormal behaviors in social relations of man with his fellows, including the peculiar features of the environment can all contribute to occurrence of diseases in society. Adequate attention should be given to all the factors when interpreting diseases in society.

### **Recommendations**

The study recommends collaborative efforts of health investigators of all disciplines, including social scientists. This approach will improve awareness or knowledge about disease occurrence in society. Given paucity of baseline-epidemiological information and weak participation of all related health professionals, governments and non-governmental organizations should broaden the inclusive criteria of health teams to accommodate sociologists in health investigations for a better interpretation of disease occurrence in society.



## References

- Barker, P. (1998). *Mothers, babies, and diseases in later life*. 2<sup>nd</sup> ed. New York: Churchill Livingstone.
- Center for Disease Control and Prevention (2015). U.S Public Service *Syphilis Study at Tuskegee*. <http://www.cdc.gov/tuskegee/timeline.htm>.
- Fre' rot, M, Lefebvre, A, Aho, S, Callier P, Astruc, K, & Aho Gle'le' S, (2018). *What is Epidemiology? Changing Definition of Epidemiology, 1978-2017*, PloS ONE 13 (12):e0208442. <http://doi.org/10.1371/journal.pone.0208442>.
- Gillman, M. (2006). Developmental Origins of Health and Disease, *New England Journal of Medicine*, 27: 353(17): 1848-18500. Doi: 10.1056/NEJMED058187.
- Internationa lLabor Office (2010). List of occupational diseases (revised 2010). *Occupational Safety and Health Series*, 74.
- Jones, E, Patel, G, Levy, A, Storeygard, A, Balk, D, Gittleman, L & Daszak P. (2008) Global Trends in Emerging Infectious Diseases, *Nature*, 451, 990-U4.
- Karesh B., Dobson A., Lloyd-Smith O., Lubroth J., Dixon A., Bennett M., Aldrich S., Harrington T., Formentry P., Loh H., Machalaba C., Thomas J. & Heymann L. (2012). Ecology of Zoonoses: Natural and Unnatural Histories. *Lancet*, 380, 1936-45.
- Machalaba, C, Daszak, P, Karesh, W & Romanelli, C. (2015) Anthropogenic Drivers of emerging infectious diseases. Eco health alliance. Brief for GSDR 2015. [machalaba@ecohealthalliance.org](mailto:machalaba@ecohealthalliance.org)
- Merton R. 1968, 1949. *Social theory and Structure*. London: the free press of Glencoe, Collier-MacMillan Limited: 22-216.
- Nwaegbulam, C, Alao, T, & Muanya, C. (2015) Pollution threatens air quality. The Guardian News Paper <https://guardian.ng/news/pollution-threatens-air-quality/>.
- Ogundipe, S. (2018) Air pollution: Nigeria ranks 4<sup>th</sup> deadliest globally. Vanguard news paper. <https://www.vanguardngr.com/2018/09/air-pollution-nigeria-ranks-4th-deadliest-globally/>.



- Roberts, C. & Manchester, K. (2005) *Archaeology of disease.* 3<sup>rd</sup> ed. Ithaca, N.Y.: Stroud: SuttonPublishing. <http://www.thehistorypress.co.uk/products/The-Archaeology-Of-Disease-The-Third-Edition.aspx>.
- Romanelli C., Cooper D. & Dias F. (2014). The integration of biodiversity into One Health. *Revue Scientifique et Technique, Office International des Epizooties*, 33(2), 487-496.
- Taylor, H, Latham, M, & Woodhouse, J. (2001). Risk factors for human disease emergence. *Philosophical Transactions of the Royal Society of London Series B-Biological Sciences*, 356,983-989.
- Turner J. 2001. *The Structure of Sociological Theory*: Rawat Publications, Jaipur: Printing Press: 87-88.
- Wahlang J. (2019). *Robert. K. Merton: A Paradigm for functional analysis in Sociology* (July 4, 1910-february 23, 2003).
- WHO. (2003). *Ultraviolet radiation as a hazard in the workplace.* <http://www.who.int/peh-uv/intersunprogr.htm>.
- Young Y. (2001). *Sociology of health illness, Soc.225*. Nassau Community College <http://www3.ncc.edu/faculty/soc/youngy/soc225syllabus>.